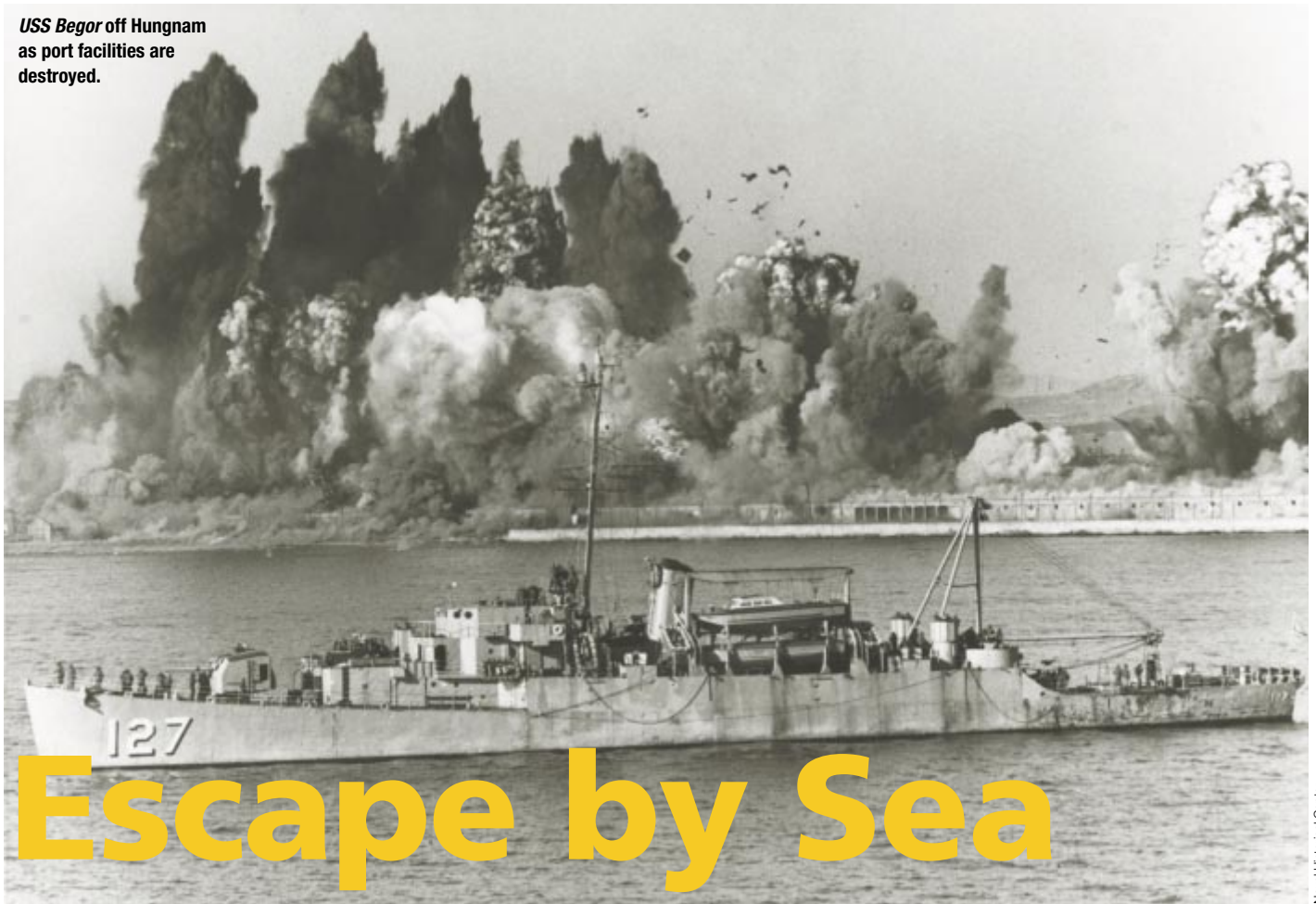


*USS Begor* off Hungnam  
as port facilities are  
destroyed.



Naval Historical Center

# Escape by Sea

## The Hungnam Redeployment

By DONALD CHISHOLM

**T**he two great military extractions from the beach of the 20<sup>th</sup> century occurred at Dunkerque in 1940 and Hungnam in 1950. In both cases a large number of troops were withdrawn in the face of superior enemy strength. And although they are often invoked in the same breath, Hungnam may be the more impressive. Conducted by Rear Admiral James Doyle, Commander, Combined Task Force 90 (CTF 90), the operation was a true redeployment.

The tally was staggering: 105,000 troops, 91,000 civilians, 17,500 vehicles, and 350,000 tons of supplies were pulled from Hungnam. When the port was closed on Christmas Eve 1950, all facilities were blown up and nothing was left to the advancing communists.<sup>1</sup> By every standard, the redeployment was a success on the tactical, operational, and strategic levels.

### Into a Doctrinal Void

Notwithstanding their amphibious capabilities, the Navy and Marine Corps were geared to assaults, not extractions. Experience during World War II included no such reversals,

---

Donald Chisholm teaches in the Joint Military Operations Department at the Naval War College and is the author of *Waiting for Dead Men's Shoes: Origins and Development of the U.S. Navy's Officer Personnel System, 1793–1941*.

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>2001</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2001 to 00-00-2001</b>	
4. TITLE AND SUBTITLE <b>Escape by Sea. The Hungarian Redeployment</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>National Defense University, Institute for National Strategic Studies, 260 Fifth Avenue SW Bg 64 Fort Lesley J. McNair, Washington, DC, 20319</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>9</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

though it was thought that some operations were in doubt (such as Buna and Biak in New Guinea and Salerno in Italy) and evacuation might be required. Extant amphibious doctrine only provided for planning and organizing assaults. Thus commanders on the scene had neither specific doctrine nor comparable experience to guide their decisionmaking.

Hungnam presents an ill-structured problem. It is not that these conundrums have no structure, rather that decisionmakers cannot discern it. Problems are distinguished by the degree to which their constituent parts

**the magnitude of Hungnam had to be discerned and reevaluated before as well as during its execution**

and relationships among those parts are understood. Typically, ill-structured problems are those not encountered previously in exactly the same form and for which no predetermined and explicitly ordered responses exist.

Such problems seldom stand still while decisionmakers try to impose a structure on them. Their components and interrelationships may change enough in a short time to make initial attempts to grasp them obsolete. This was the case in Korea. The strategic situation evolved rapidly, altering tactical decisions and, accordingly, operational problems for the Navy.

The magnitude of the Hungnam problem had to be discerned and reevaluated before as well as during execution. Just as such quandaries do not admit to computational solutions, neither are they effectively solved with hierarchical organizations. Instead they are best addressed by decentralized, self-organizing systems in which discretion resides at many points and experts are permitted to exercise judgment, principally through lateral communication.

But the learning curve is steep. Trial and error are the means of generating information and reducing uncertainty, converting something vague into a well-structured problem.



Refugees boarding landing ship.

Naval Historical Center

This claim runs contrary to the conventional wisdom on command relations. But Admiral Doyle clearly understood the challenges posed by ill-structured issues and connections between the type of problem and appropriate command relations. He proceeded accordingly.

### War for Command

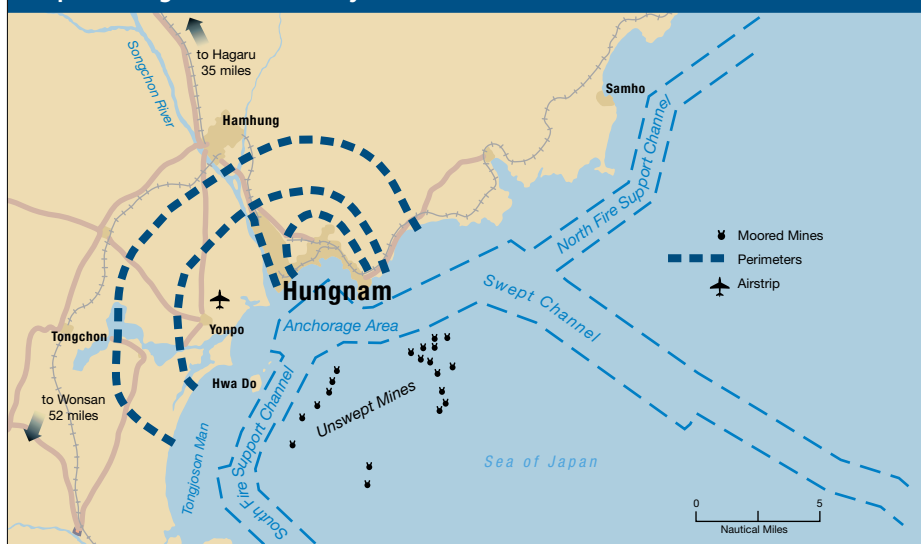
After the Wonsan-Iwon operation in 1950, Doyle told Vice Admiral Charles Turner Joy, Commander, Naval Forces, Far East, that he would not serve under Vice Admiral Arthur Struble, Commander of Seventh Fleet, in the future. When the time came to organize for Hungnam—a plan for the evacuation of U.N. forces was issued on November 13—Joy acceded to Doyle on the grounds that he needed him more than Struble. Doyle reported directly to Joy and enjoyed significant discretion. His duties were quite broad and included redeployment, shipping protection, control of air support and naval gunfire in embarkation areas, and maintenance of the blockade along the east coast of Korea.

Admiral Forrest Sherman, Chief of Naval Operations, was uncomfortable about giving such authority to Doyle.

He feared disaster if the evacuation went awry. Sherman had already told Joy that he favored Struble for Inchon and Wonsan. In particular, Sherman was unwilling to pass control of fast carriers to an amphibious commander. Sherman arranged for Lieutenant General Lemuel Shepherd, Commander, Fleet Marine Force Pacific, to assume command of the Hungnam operation if Doyle proved ineffective. For his part, Doyle found that “Sherman knew little, if anything, about amphibious operations.”

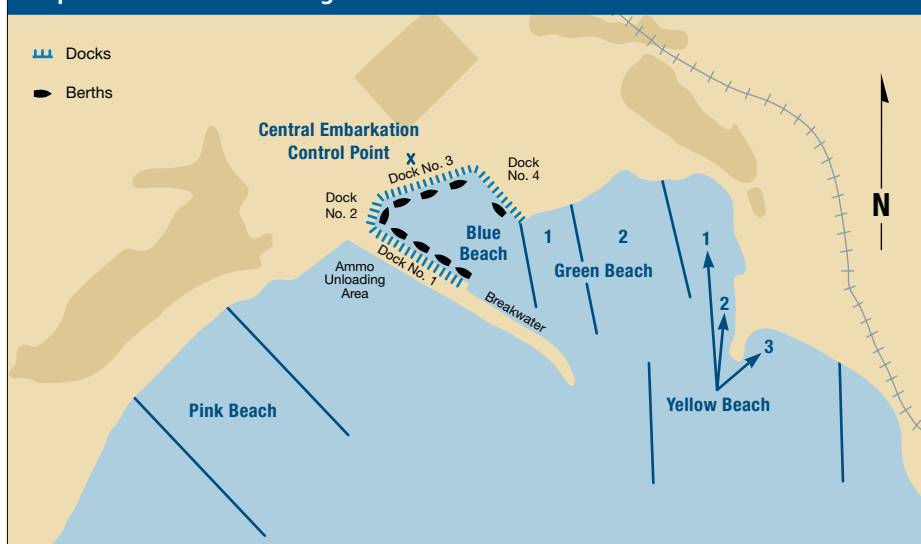
Despite Sherman’s concern, the decision by Joy stood. Doyle had considerable leeway in the redeployment, including command of amphibious ships, naval gunfire, and Marine ground-based air as well as carrier aircraft. He coordinated additional naval gunfire and air support with Struble. Joy adopted a hands-off policy and his command served largely in a supporting role for CTF 90 in the redeployment. Arrangements also allowed Seventh Fleet to maneuver as necessary should an air- or sea-based threat develop against Japan or Formosa. The

Map 1. Hungnam and Vicinity



Source: Malcolm W. Cagle and Frank A. Manson, *The Sea War in Korea* (Annapolis: Naval Institute Press, 2000), p. 173.

Map 2. Evacuation of Hungnam



Source: James A. Field, Jr., *History of U.S. Naval Operations: Korea* (Washington: Government Printing Office, 1962), p. 290.

Air Force did not provide air-ground support to X Corps though it contributed night heckler coverage. In addition, its transport resources were essential to evacuating the wounded from Chosin.

### Power Down

Doyle had two amphibious groups at his disposal. With simultaneous retrograde actions by Eighth Army on the west coast and an independent X Corps on the east coast, Doyle ordered

Amphibious Group Three under Rear Admiral Lyman Thackrey to the west coast while Amphibious Group One remained under his direct command to support X Corps on the east coast. This meant that Thackrey conducted operations at Chinnampo and Inchon largely independently, while Doyle commanded efforts at Songjin, Wonsan, and Hungnam.

In June 1950, Amphibious Group One arrived in Japan to train Eighth Army in amphibious operations. Though only a token element in the months before Hungnam, it became a full-fledged amphibious force. Equally important, Doyle was a distinguished officer. And his staff, which had gained experience during World War II, had comparable backgrounds. They were senior and were overqualified for their billets. Thus they provided a tremendous pool of talent.

Embarked with Amphibious Group One when it went to Japan was Mobile Training Team Able, the troop training unit of Amphibious Training Command. Led by Colonel Edward Forney, USMC, the officers assigned to Team Able had worked together for some time and were known to Doyle. Like the group staff, the team had been integral to operations over the preceding months. Doyle initially seconded the team to 1<sup>st</sup> Cavalry Division (which had no proficiency in amphibious operations) to plan the landing at Pohang Dong. It was formally placed with X Corps for Inchon and Wonsan-Iwon, with Forney as corps deputy chief of staff executing the bulk of the planning. This meant that Team Able and the amphibious group staff were not strangers. Neither were Team Able and X Corps. Doyle said that Forney "could get along with anyone—and without compromising himself. This facility proved invaluable, for the corps commander [Lieutenant General Edward Almond, USA] was at best prickly, at worst arrogant and overbearing."<sup>2</sup>

At Hungnam, Doyle granted his subordinates considerable authority to make arrangements for redeployment as their experience suggested. This was key. What made the operation possible was the deep reservoir of practical knowledge of amphibious operations among Navy and Marine Corps staffs. Doyle could grant discretion to his subordinates, confident that they understood their craft. Elements then coordinated their efforts through direct lateral communications.

### Retreat in the Making

General Douglas MacArthur directed X Corps to concentrate around Hamhung-Hungnam on November 30



1st Cavalry Division  
landing at Pohang,  
July 1950.



AP/Wide World Photos

while Eighth Army retired southward to Pyongyang and Seoul. Doyle placed all ships on two-hour notice and they sailed on November 30 and December 1 from Japan.

It remained unclear whether U.N. forces would withdraw to Japan or maintain lodgements at Pusan and Hungnam over the winter. However, the Joint Chiefs told MacArthur on December 1 to withdraw X Corps. Discussions in Tokyo on December 7 modified that plan, with Eighth Army holding Seoul until it was necessary to retire to Pusan and then ferrying X Corps back south.

Doyle and his staff initially regarded redeployment as an amphibious landing in reverse. It was an apt comparison and provided a starting point for imposing some sort of structure on the problem and devising

plans to solve it. Doyle intended that "excess supplies and supporting troops would be the first to leave, and as the beachhead shrank with the embarkation of combat forces, gunfire and air support would assure no diminution of combat power ashore. In the final stage, bombardment would be our only force ashore."<sup>3</sup>

An opportunity to test this tentative plan for Hungnam was presented in a smaller extraction executed by Transport Division 11 at Wonsan commencing on December 3. X Corps reported that Wonsan was under heavy enemy pressure and that roads and rail lines to Hungnam had been cut, requiring amphibious redeployment. Doyle explicitly wanted this initial evacuation to be a small-scale test of

the plans and procedures proposed for Hungnam, which were as yet only hypotheses. The evacuation was simple and direct. The troops ashore deployed around the city in an arc that was progressively reduced as men and supplies within the beachhead loaded and left. Support ships isolated Wonsan by shellfire, firing as requested, providing random harassing at night, interdiction fires on selected targets, and star shells to illuminate the battlefield.

When Doyle arrived at Wonsan on December 4, there was no serious enemy pressure, and all but rear elements of 3<sup>d</sup> Infantry Division had moved to Hungnam by road.

Placing TNT on bridge  
over Taedong River.



AP/Wide World Photos

The amphibious group prepared evacuation and redeployment plans based on the lessons of Wonsan. Subordinate unit planning proceeded simultaneously, and continual communication was maintained with Doyle and his staff in Hungnam harbor on the flagship *USS Mount McKinley*. Task Element 90.04 left Wonsan on December 6 to lift a Korean corps from Songjin to Hungnam, completing embarkation December 9. Operations at Wonsan ended the following day, when Doyle took command of port functions. The group began outloading X Corps personnel and equipment. It also shifted from shore-based to seaborne logistics, with floating petroleum, oil, and lubricants and ammunition dumps, along with an evacuation center and prisoner of war camp afloat.

Doyle issued his loading and control scheme and completed plans for naval gunfire and air support on December 11. Two days later he issued operation order 20-50, specifically covering redeployment from Hungnam. The same day, orders for gunfire support and air support were finalized and coordinated.

### Operations Ashore

The control and loading plan, based on a staff study of the physical features of the harbor, established a series of control posts at Hungnam which

### the amphibious group prepared plans based on the lessons of Wonsan

formed a special task organization. The CTF 90 operations section aboard *USS Mount McKinley*, under the operations officer, coordinated ship movement, assigned anchorages, provided docking instructions, and issued sailing orders for all shipping. In addition, it supervised operations of other control stations. Actual shipping control was accomplished by stationing a radio-equipped harbor control vessel in port. An officer boarded all vessels on arrival to ascertain load status, capacity, amount and condition of loading equipment, and loading peculiarities. The information was radioed to CTF 90 operations. Ships were directed to be

ready for movement on immediate, two-hour, or later notice as required.

On December 9, X Corps Embarkation Control Group was established to supervise corps loading. It included a control officer, executive officer, representatives from the technical services of each corps, and the CTF 90 staff combat cargo officer who served as liaison officer. At various times it included groups from 1<sup>st</sup> Marine Division, 7<sup>th</sup> Infantry Division, 3<sup>d</sup> Infantry Division, and a South Korean corps. Like landings at Inchon and Wonsan, planning for X Corps was done by marines under Forney. In a shed on the docks, he assigned personnel to key positions in the control group where their four months with X Corps had created strong relationships.

Doyle remembered that Almond had "ensured that his subordinates followed his example. He established the embarkation priority as personnel, vehicles, equipment, supplies, and refugees. But he never objected to departures from that order, knowing that we had good reason. . . ."<sup>4</sup>

Forney and his staff selected:

*X Corps units to be loaded on the basis of available tactical and administrative information and assigned shipping in consultation with the operations section of Task Force 90. Port operating units were then advised of dockside requirements, the loading section ground out its plans, the movement section got the traffic down to the water, and the rations people laid down these useful items alongside.*<sup>5</sup>

This group was in direct communication by telephone with all relevant units and CTF 90 operations.

Each corps provided the embarkation control group a readiness for loading report (covering personnel, vehicles, bulk cargo, et al.) prior to its time to commence loading as promulgated in the master time schedule, which in turn relied on the tactical situation. X Corps broke down data into shipping requirements as advised by a combat cargo officer. CTF 90 operations assigned shipping based on these requirements and available berths. The embarkation control group was given



Koreans fleeing  
Hungnam,  
December 1950.



DOD

the identity of ships assigned along with data on their capacity and features, and a paper load was planned. Shortages and overages in shipping were reported to CTF 90 and the control group adjusted plans as necessary.

The port director had operational control over the movement of all shipping in the inner harbor. Three officers

were assigned to port director control. The director and beachmaster shared a radio-equipped landing craft as a dispatch boat. Ships berthed along one of four docks in seven berthing spaces. Experimentation quickly led to procedures for best use of the spaces, including double-banking ships at docks. Two radio-equipped Army yard tugs helped to dock and undock rapidly. Doyle and his staff timed the process so a ship

reached its berth just as the first troops and supplies to go on board arrived.

CTF 90 operations told the port director that a ship would be docked at a particular berth. The ship was then directed to proceed from its anchorage and wait in the vicinity of the breakwater for a pilot to dock it. The embarkation control liaison officer advised CTF 90 when a ship would finish

Evacuating supplies  
from Hungnam Harbor.



U.S. Army

loading and the latter gave it a chop time, which was relayed to the port director. At that time the craft was undocked and moved out.

The beachmaster control unit managed activities in the transport landing ship beaching area, a function analogous to the port director. A control officer directed movement of smaller craft in the inner harbor and was stationed on the control vessel. Four officers and seven enlisted men from CTF 90 assumed this role. The control officer also assisted in movements of landing craft in coordination with the port director and beachmaster.

The CTF staff civil engineer and another officer were on continuous duty with 2<sup>d</sup> Engineer Special Brigade, which served as the shore party responsible for physical aspects of loading. His dual role was advising the brigade on expediting the loading and keeping CTF 90 operations constantly informed of progress.

Each control element usually worked independently or coordinated with others as required. Given the short timeframe, speedy communication was essential, and the discretion Doyle gave to subordinates would have

been squandered without a simple communications system. All control posts maintained continuous contact via radio. Doyle felt "the most important factor in the operation of the control organization was the establishment of [these] special primary and secondary [very high speed] voice radio circuits directly connecting control stations." The primary circuit was provided for all stations except for one staffed by the CTF 90 liaison officer at X Corps embarkation control group. The secondary circuit carried messages between the CTF 90 liaison officer at X Corps and CTF 90. A simple numerical code was used to identify ships, maintaining security.

Because outloading functioned without need of direct supervision by Doyle, he could focus on stopping the enemy from advancing on the perimeter. Toward that end he employed air attacks and naval gunfire to maintain the necessary separation. "Basically," he recounted, the notion was to "put in front of the U.N. units a zone of fire through which the enemy could not pass."<sup>6</sup>

Doyle had organic naval gunfire support under his control. Ships were stationed to deliver emergency support for X Corps and simultaneously defend shipping against air attack. Beginning December 15, positioned in assigned mineswept channels extending 10 miles north and south of Hungnam, the element began deep support fires (corps artillery provided close support), principally interdiction and harassing fires and illumination rounds since the enemy tended to press lines at night. When the perimeter contracted, the gunfire support ships moved to closer stations for direct support. Observation and fighter aircraft found targets of opportunity and supplemented ground observers. Rocket craft were used for reverse slope fire to attack the enemy on the right flank overlooking Hungnam. *USS Missouri* arrived December 24 to provide added firepower. Naval gunfire was maintained in a zone 2,500 yards wide at a distance of 3,000 yards from the beaches and harbor. In addition to the barrage, observers called in fires that prevented movement by the enemy through the zone by day. When the last allied troops were off the beaches, destructive fires were delivered into the port area. Particular attention was given to railroad cars.

The Chinese elected not to seriously interfere with operations at Hungnam. Combined with weather, 1<sup>st</sup> Marine Division hindered the enemy. "Their losses would certainly have been greater than they could have hoped to inflict," Doyle noted. "Fire power from the sea would have dwarfed what they had already absorbed during their attack on the Marines at Chosin."<sup>7</sup>

Beyond surface fires, support was also provided by 1<sup>st</sup> Marine Aircraft Wing from Yonpo airfield near Hamhung. The wing controlled all planes (including carrier-based) and acted as tactical air support center until December 15. The center then moved to *USS Mount McKinley*, and CTF 90 assumed control within a 35-mile radius of Hungnam, including Task Force 77 and Task Group 96.8 assets.



## Allied Forces

Fifteen nations other than the United States and Republic of Korea sent combat forces to serve in United Nations Command. Five other nations deployed noncombatant capabilities in the form of hospitals or ambulance units. Of the some 150,000 foreign servicemembers who fought in the Korean War, 3,360 were killed, 11,886 were wounded, and 1,801 were missing in action. A total of 1,376 foreign prisoners of war were repatriated to 12 countries in 1953.

**Ground Forces.** Fourteen allies sent combat formations: Australia, Canada, New Zealand, and the United Kingdom comprised British Commonwealth forces. Belgium, Colombia, Ethiopia, France, Greece, Luxembourg, The Netherlands, Philippines, and Thailand fielded battalion-sized units which were attached to U.S. Army divisions while Turkey deployed an infantry brigade.

**Naval Forces.** Eight allied nations—Australia, Canada, Colombia, Denmark, The Netherlands, New Zealand, Thailand, and the United Kingdom sent over 100 ships to Korean waters, including carriers, destroyers, cruisers, and frigates. These vessels were assigned to a carrier strike force (Task Force 77), blockading/escort force (Task Force 95), amphibious landing force (Task Force 90), and logistic support force (Task Force 96). Foreign ships participated in the Inchon landing; evacuation of Nampo, Hungnam, and Wonsan; shore bombardment of North Korea; and patrols of the sea lines of communication to South Korea.

**Air Forces.** The first foreign contribution in Korea, 77<sup>th</sup> Fighter Squadron, arrived from Australia in July 1950. It was attached to an American unit, 35<sup>th</sup> Fighter Group, while 2<sup>d</sup> Fighter Squadron from South Africa joined another American unit, 18<sup>th</sup> Fighter Group. It provided close air support to U.N. forces. Australia, Canada, Greece, and Thailand provided air transport units.



British commandos planting charges near Songjin.

DDO

JFQ

Marine observers provided forward air control throughout the operation. Doyle recollected that they “understood the requirements of the troops and the capabilities of the covering aircraft and their armament loads.”<sup>8</sup> Detachments of a Marine air and naval gunfire liaison company assigned to units of X Corps maintained radio contact with the forward air con-

**at sea there were never fewer than four carriers to provide air support**

trollers, supporting aircraft, and naval gunfire ships. At sea there were never fewer than four carriers to provide air support, coordinated by CTF 90 operations with CTF 77 as experienced in

the Pohang Dong operation. Air and naval gunfire communication was handled as prescribed for assault amphibious operations.

### Meeting the Unexpected

Based on Wonsan, planners estimated that lift would be needed for some 25,000 refugees. The actual evacuation included more than three times that number. Moreover, the refugees required both food and shelter while awaiting embarkation. To meet this challenge the Navy delivered rice.

When the redeployment order was received, ships were unloading supplies

for the defensive perimeter and sustenance for the refugees, tying up some port facilities for several days. Unloading halted when possible and evacuation began in earnest. A marked acceleration occurred on December 12. By the next day, 55 percent of the men, 40 percent of the vehicles, and 70 percent of bulk cargo of 1<sup>st</sup> Marine Division had been loaded.

Plans were also developed to lift a Korean corps from Hungnam to Samchok. Originally, X Corps estimated that only 12,000 troops, a few vehicles, and three ships would be committed. But lift requirements climbed to 25,000 men, 700 vehicles, and heavy equipment. More shipping would be needed. Intelligence reports on December 13 led to the choice of

Bokuko Ko as a site for landing the South Koreans. Task Group 90.8 was formed on December 16 and departed the next day to begin disembarking. Operations continued despite 40-knot winds, heavy seas, and freezing weather. Ships dragged anchor and small boats drifted loose. At sea, winds reached 60 knots and flight operations were suspended.

At 1600 on December 19, Almond arrived aboard *USS Mount McKinley*, and command of all shore operations passed to Doyle who, to avoid any confusion, pointedly told Almond: "You understand, general, that these troops are now under my command."<sup>9</sup> This was precisely the reverse of the procedure for changing command in amphibious assaults, when command passes to the ground commander once troops are established ashore and amphibious commanders are notified.

7<sup>th</sup> Infantry Division was loaded on December 20, giving Doyle enough confidence in the operational trajectory to set December 24 as a tentative D-day when all troops would be withdrawn. Two days later it became clear that there was sufficient shipping to add 4,000 tons of ammunition and 13 boxcars to outloading. Instructions for D-day embarkation were distributed. The next day refugees were loaded. The port director was ordered to commence undocking ships at 2200 hours. Harassing fire from gunfire support ships was increased. The port was closed an hour later.

At 0950 hours on December 24, H-hour was confirmed as 1100. Simultaneously, aircraft dropped napalm on enemy units that had begun pressing the perimeter. At 1217 hours, two ammunition dumps in the Pink Beach area were prematurely exploded by the Army, causing a loss of lives and boats. The first elements of combat forces, less covering forces, commenced loading at 1100. All beaches were clear of friendly forces by 1405. Five minutes later, demolition charges were detonated around the inner harbor. General sortie from the harbor started at 1457 hours, *USS*

*Mount McKinley* departed at 1632, and the operation ended. No allied personnel had been left.

The key to this remarkable feat is found in Doyle's recognition that, although vastly experienced in amphibious operations, he and his staff had never encountered a problem remotely resembling Hungnam. The linchpin was deciding to form an ad hoc organization and devise a plan predicated on conducting an amphibious operation in reverse—an arrangement that enabled experts to exercise judgment, identify problems, generate solutions, and directly and quickly communicate with others.

Doyle established and maintained a decentralized, self-organizing system that proved highly adaptive, flexible, and suited to the principal constraint, time. Experimentation and rapid learning essential to resolve ill-structured problems were the rule. The plan and organization resulted from consultative planning conferences that facilitated input from those members of the staff with the requisite expertise. The profound lesson of Hungnam is found in how the operation was approached and organized.

The worst fears of commanders in Korea and media in the United States were not realized in December 1950. Hungnam was no Dunkerque, nor had it been likely to turn into one from the perspective of the Navy and Marine Corps. Many factors led to success, including the availability of specialized amphibious shipping and control of sea and air, but the defining element was effectively organized, experienced professionals and the willingness of their commander to let them do their jobs.

## NOTES

<sup>1</sup> The operations were not without matériel and personnel casualties. On December 20–22, eight soldiers died and 12 became severely ill by ingesting methyl alcohol. On December 24, prematurely detonated ammunition killed a Marine lieutenant and Navy seaman and injured another 34 personnel. And an ROK landing ship fouled its propellers with manila line and wire. Loaded with more than 7,000 people, it was extracted from the beach but remained in harbor overnight to have its propellers cleared. When a gale came up, an unknown number of refugees died of exposure. See Walter Karig, Malcolm W. Cagle, and Frank A. Manson, *Battle Report: Volume VI, The War In Korea* (New York: Rinehart, 1952), pp. 432–33.

<sup>2</sup> James H. Doyle and A.J. Mayer, "December 1950 at Hungnam," *U.S. Naval Institute Proceedings*, vol. 105, no. 4 (April 1979), p. 50.

<sup>3</sup> *Ibid.*, pp. 47–48.

<sup>4</sup> *Ibid.*, pp. 51–52.

<sup>5</sup> James A. Field, *History of Naval Operations in Korea* (Washington: Government Printing Office, 1962), p. 291.

<sup>6</sup> Doyle and Mayer, "December 1950 at Hungnam," p. 53.

<sup>7</sup> Malcolm W. Cagle and Frank A. Manson, *The Sea War in Korea* (Annapolis: U.S. Naval Institute Press, 1957), p. 188.

<sup>8</sup> Doyle and Mayer, "December 1950 at Hungnam," p. 53.

<sup>9</sup> Robert D. Heintz, interview with James H. Doyle, July 3–August 1, 1966. Robert D. Heintz Papers, Marine Corps University Research Archives.

JFQ